

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph starting on page 3, line 30 of the specification with the following paragraph.

A barrier layer 24 is provided in the layer level between first and second solid electrode ~~layer~~ layers 51, 52 in the region of further reference electrode 22a and in the region between further reference electrode 22a and first pump electrode 20. Barrier layer 24 extends up to the edge of sensor element 10 and is made of, for example, Al_2O_3 . The material of barrier layer 24 is selected in this case in such a way that it, at least to a large extent, allows neither ionic conduction nor electron conduction.